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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,888	09/12/2003	Mohamad El-Batal	LSI.81US01 (03-1078)	6950
24319	7590	08/20/2008	EXAMINER	
LSI CORPORATION 1621 BARBER LANE MS: D-105 MILPITAS, CA 95035			CHERY, MARDOCHEE	
			ART UNIT	PAPER NUMBER
			2188	
			MAIL DATE	DELIVERY MODE
			08/20/2008	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/660,888	<b>Applicant(s)</b> EL-BATAL ET AL.	
	<b>Examiner</b> MARDOCHEE CHERY	<b>Art Unit</b> 2188	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 May 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. This Office action is a reply to applicant's communication filed on May 13, 2008 in response to the Office action mailed on February 13, 2008. The applicant's remarks has been considered in light of the following.

2. No claims have been amended, added, or canceled.

### ***Response to Arguments***

3. Applicant's arguments filed on May 13, 2008 have been fully considered but they are not persuasive.

a. Applicant's representative argues on page 3 of the remarks that "the backup medium of Ofek is not used as a "delta log" for recording data incoming to the data processing system while the second data storage facility has been isolated therefrom".

However, it is worth mentioning that the claims simply recite "starting a delta log concurrent with said step of removing one of said plurality of data storage units" and "storing a record of said changes in said delta log during the period when one of said plurality of data storage units is removed". Clearly, there is no indication of what (storage unit) is used as "a delta log" for recording incoming data during removal of the data storage units". The claims simply require "starting a delta log" and "storing

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a record of changes in said delta log”, irrespective of where that “delta log” may be stored.

- b. Applicant’s representative further argues on page 4 of the remarks that “no “delta log” is started when the second data storage facility is isolated”.

As claimed, “a delta log” is used to store a record of changes during a period when one of the plurality of data storage units is removed. Ofek unequivocally discloses “isolating a second data storage facility and recording changes (creating a delta log) to the data in the first data storage facility made during a second mode of operation (i.e., during isolation of the second data storage facility; col. 14, lines 48-53”.

- c. In view of the foregoing, the rejection of claims 1-24 as being anticipated by Ofek (6,549,921) is indeed maintained.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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5. Claims 1-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Ofek (6,549,921).

As per claim 1, Ofek discloses a method for recovering data in a redundant data storage system having a plurality of data storage units [Fig. 1, col. 14, lines 38-46], said method comprising: storing said data on said plurality of data storage units according to a redundant data storage method [col. 14, lines 38-46]; removing one of said plurality of data storage units for a period [col. 14, lines 48-49]; starting a delta log concurrent with said step of removing one of said plurality of data storage units [col. 14, lines 50-]; changing a portion of said data on the remainder of said plurality of data storage units during the period when one of said plurality of data storage units is removed in accordance with the redundant data storage method [col. 14, lines 59-64]; storing a record of said changes in said delta log during the when one of said plurality of data storage units is removed [col. 14, lines 59-64]; replacing said one of said plurality of data storage units [col. 14, lines 59-64]; and updating said one of said plurality of data storage units [col. 14, lines 59-64].

As per claims 9 and 17, the rationale in the rejection of claim 1 is herein incorporated. Ofek further discloses a redundant data storage system capable of fast restoration of serviced data storage units [Fig. 1] comprising: a plurality of data storage units [Fig. 1, *Storage devices 15, 16, 42,43*]; and a controller that stores data on said plurality of data storage units according to a redundant data storage method [Fig. 1, *controllers 31,*

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34], changes a portion of said data after taking one of said plurality of said data storage units off line [col. 18, lines 1-7], stores a record of the changes in a delta log that are made to the remainder of the plurality of said data storage units [col. 18, lines 5-7], brings said one of said plurality of said data storage units online, and updates said one of said plurality of said data storage units by updating those portions of data recorded in said delta file [col. 18, 13-19].

As per claims 2, 10 and 18, Ofek discloses the redundant data storage method comprises RAID 1 [col.1, line 35-45].

As per claims 3, 11 and 19, Ofek discloses redundant data storage method comprises RAID 3 [col. 1, lines 35-45].

As per claims 4, 12 and 20, Ofek discloses redundant data storage method comprises RAID 5 [col. 1, lines 35-45].

As per claims 5, 13 and 21, Ofek discloses the redundant data storage method comprises remotely mirroring the data [col. 1, lines 36-45].

As per claims 6, 14 and 22, Ofek discloses the one of said data storage units comprises a plurality of disk drives [col. 3, lines 44-48].

As per claims 7, 15 and 23, Ofek discloses delta file comprises pointers to said portion of said data that is changed [col. 14, lines 50-64].

As per claims 8, 16 and 24, Ofek discloses the delta file comprises an updated version of the portion of the data that is changed [col. 18, lines 12-19].

### ***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. When responding to the office action, Applicant is advised to clearly point out the patentable novelty that he or she thinks the claims present in view of the state of the art disclosed by references cited or the objections made. He or she must also show how the amendments avoid such references or objections. See 37 C.F.R. 1.111(c).

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8. When responding to the Office action, Applicant is advised to clearly point out where support, with reference to page, line numbers, and figures, is found for any amendment made to the claims.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mardochee Chery whose telephone number is (571) 272-4246. The examiner can normally be reached on 8:30A-5:00P.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hyung Sough can be reached on (571) 272-6799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hyung S. Sough/  
Supervisory Patent Examiner, Art Unit 2188  
08/18/08

August 18, 2008



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Mardochee Chery  
Examiner  
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